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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,270	10/22/2003	Yuichi Shimizu	117243	4556
25944	7590	01/23/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			TON, MINH TOAN T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/690,270

Applicant(s)

SHIMIZU ET AL.

Examiner

Toan Ton

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8,18,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,18,21-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 8 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al (US 5966193).

Zhang discloses an electro-optical device comprising (see at least Figure 7D and its detailed descriptions): a substrate; data lines 80 extending in a first direction; scanning lines extending in a second direction and intersecting the data lines; pixel electrode 84 and thin film transistor disposed so as to correspond to intersection regions of the data lines and the scanning lines; storage capacitor(s) electrically connected to the thin film transistor and the pixel electrode (capacitor inherently formed between the shielding layer and the pixel electrode, between the data line and the shielding layer); a shielding layer 85 disposed above the data lines and below the pixel electrode, nitride film 82 formed along the data lines and being wider than the data lines.

Zhang discloses interlayer-insulating films (e.g., 79, 82) arranged as bases of the pixel electrodes (see at least Figures 7E).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-7, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang as applied to claims 1-3, 8 and 22 above, and further in view of Murade (US 6885417) and Song et al (US 6781651).

Zhang discloses that the use of relay layer electrically connected to the thin film transistor through the contact hole yields advantages such as increasing the open area ratio, reducing or preventing a punch-through by etching when the contact hole is opened. Song discloses the use of buffer/relay layers yields advantages such as providing additional storage capacity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the use of relay layer(s) electrically connected to the thin film transistor such as increasing open area ratio, providing additional storage capacity.

Overlapping the bus (gate/data) line with the pixel electrode in the LCD art is common and known for achieving advantages such as capacitance effect, high aperture ratio. Therefore, it would have been at least obvious to one of ordinary skill in the art to employ the data line so as producing a storage capacitor for advantages such as capacitance effect, high aperture ratio. Further, forming of the same material achieves advantages such as cost-reduction, as a common goal in the art.

It is known and a common goal in the art to minimize manufacturing steps (e.g., forming simultaneously, forming of the same material), thus resulting in advantages such as cost-reduction. Forming the relay layers of the same material as the shielding layer achieves

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advantages such as cost-reduction, as a common goal in the art. Therefore, it would have been at least obvious to one having ordinary skill in the art to employ the relay layer of the same material as the shielding layer for achieving advantages such as cost-reduction, as a common goal in the art. Further, alternative materials for the shielding layer such as a transparent conductive film are obvious variations (i.e., not patentably distinct) to one of ordinary skill in the art.

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Murade and Song as applied to claims 5-7, 18 and 21 above, and further in view of Yang (US 5429962) and Ellis (5546204).

Song discloses the data line formed as a double-layered structure (one layer is formed with a material having a lower resistance, the other with a material having a good contact characteristic with other materials) [see at least col. 4, lines 27-31].

Yang discloses an active matrix LCD device comprising a data line formed of polysilicon and a metal layer (commonly, e.g., Al, Cr, Mo) for achieving advantages such as minimizing breakage of the data line. Ellis discloses an active matrix LCD device comprising data line constructed of a strip of refractory metal laid on top of a layer of polysilicon for achieving advantages such as achieving low resistance. Therefore, it would have been obvious to one of ordinary skill in the art to employ data line comprising polysilicon and metal layer (e.g., commonly Al, Cr, Mo.) for achieving advantages such as minimizing breakage of the data line, low resistance. Further, forming the relay layer of the same material as the data line achieves advantages such as cost-reduction, as a common goal in the art.

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***Response to Arguments***

6. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 18, 2006

*Min*  
TOANTON  
PRIMARY EXAMINER